

## CLAIMS

We Claim:

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1. A method of facilitating circuit design, said method comprising:
    - a) causing to be displayed information related to a module of a plurality of available modules, said module representing a function implementable in resources in said circuit, said display performed in response to said module being selected; and
    - b) determining a valid position for said module in a graphical user interface, said graphical user interface having a plurality of resource images representing said resources in said circuit, said valid position based on characteristics of said module and characteristics of said resources, said determination made in response to a request for said valid position for said module in said graphical user interface.
  2. The method of Claim 1, further comprising:
    - c) generating at least two elements selected from the group consisting of: an application programming interface (API) for programming an operation of said module, source code for realizing said module in said resources, an interrupt vector table having a call to an interrupt service routine for said module, and a data sheet for said circuit.
  3. The method of Claim 1, further comprising:
    - c) determining a new valid position for said module in said graphical user interface, said determination in response to a request for a new position for said module.
- sub 07

4. The method of Claim 3, wherein c) comprises:

c1) receiving a request for said new valid position for said module;

c2) determining said new valid position for said module in said graphical  
5 user interface, based on characteristics of said module and characteristics of said  
resources; and

c3) highlighting at least one of said resource images on said graphical user  
interface to indicate said new valid position.

10 5. The method of Claim 1, further comprising:

c) determining positions for a plurality of modules in said graphical user  
interface, in response to requests for positions for said plurality of modules; and

d) displaying a graphical user interface to facilitate configuring  
interconnections between said resource images.

15 6. The method of Claim 1, wherein b) comprises:

b1) receiving a request for said valid position for said module in said  
graphical user interface;

b2) determining said valid position, based on a description of said module  
20 and a description of said resources; and

b3) highlighting at least one of said resource images on said graphical user  
interface to indicate said valid position.

25 7. The method of Claim 1, wherein a) comprises displaying a datasheet for  
said module.

8. The method of Claim 7, further comprising:

c) causing to be displayed a plurality of tabs identifying sections of said datasheet to be displayed; and

5 d) displaying a section of said datasheet in response to one of said tabs being selected.

9. The method of Claim 1, wherein a) comprises displaying a circuit schematic for said module.

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10. A computer readable medium having stored thereon program instructions for implementing a method for assisting circuit designing, said method comprising:

a) determining valid positions in a graphical user interface for selected modules to be placed in said graphical user interface, said graphical user  
15 interface describing resources operable to implement said selected modules, said valid positions based on characteristics of said selected modules and characteristics of said resources; and

b) generating at least two elements selected from the group consisting of:  
an application programming interface (API) for programming an operation of a first  
20 of said selected modules, source code for realizing said selected modules in said resources, an interrupt vector table having a call to an interrupt service routine for a first of said selected modules, and a data sheet for said circuit, said circuit comprising said selected modules.

11. The computer readable medium of Claim 10, wherein said method further comprises:

c) causing to be displayed information related to said first of said selected modules in response to said first of said selected modules being selected to be used in said circuit.

12. The computer readable medium of Claim 10, wherein said method further comprises:

d) determining a new valid position for said first of said selected modules in said graphical user interface, said determination in response to a request for said new valid position for said first of said selected modules.

13. The computer readable medium of Claim 12, wherein d) of said method comprises:

d1) receiving a request for said new valid position for said first of said selected modules;

d2) determining said new valid position for said first of said selected modules in said graphical user interface, based on an Extensible Markup Language (XML) description of said first of said selected modules and an XML description of said resources; and

d3) highlighting at least one resource image on said graphical user interface to indicate said new valid position, said resource image representing one of said resources.

14. The computer readable medium of Claim 10, wherein said method further comprises:

c) displaying a graphical user interface to facilitate configuring interconnections between said resources operable to implement said selected  
5 modules.

15. The computer readable medium of Claim 10, wherein a) of said method comprises:

a1) receiving a request for a valid position for said first of said selected  
10 modules;

a2) determining said valid position, based on an Extensible Markup Language (XML) description of said first of said selected modules and an XML description of said resources; and

a3) highlighting at least one resource image on said graphical user  
15 interface to indicate said valid position, said resource image representing one of said resources operable to implement said selected modules.

16. The computer readable medium of Claim 10, wherein said resources comprises a plurality of classes and at least one of said modules maps to a  
20 plurality of said classes; and wherein a) comprises:

a1) receiving a request for a first of said valid positions for said first of said selected modules, said request for a first class of said plurality of classes of resources;

a2) determining said first of said valid positions, based on an Extensible Markup Language (XML) description of said first of said selected modules and an XML description of said first class of said plurality of classes of resources; and

a3) highlighting at least one resource image on said graphical user interface to indicate said valid position, said resource image representing a resource in said first class of said plurality of classes of resources.

17. A system comprising a processor coupled to a bus and a computer-readable medium coupled to said bus, said computer readable medium having stored thereon instructions, which when run on said processor perform a method for assisting circuit design, said method comprising:

a) causing to be displayed information related to a first module of a plurality of available modules, said module representing a function implementable in resources in said circuit, said display performed in response to said first module being selected;

b) determining a valid position for said first module in a graphical user interface, said graphical user interface having a plurality of resource images representing said resources in said circuit, said valid position based on characteristics of said first module and characteristics of said resources, said determination made in response to a request for said valid position for said first module in said graphical user interface; and

c) repeating a) and b) for additional modules, wherein said circuit comprises said first module and said additional modules.

Sub 07 18. The system of Claim 17, wherein said method further comprises:

d) generating at least two elements selected from the group consisting of:  
an application programming interface (API) for causing said first module to perform  
an operation, source code for realizing said modules that comprise said circuit in  
5 said resources, an interrupt vector table having a call to an interrupt service  
routine for said first module, and a data sheet for said circuit.

19. The system of Claim 17, wherein said method further comprises:

d) receiving a request for a new valid position for said first module;  
10 e) determining said new valid position for said first module, based on  
characteristics of said first module and characteristics of said resources; and  
f) highlighting at least one of said resource images on said graphical user  
interface to indicate said new valid position.

20. The system of Claim 17, wherein said method further comprises:

d) displaying a graphical user interface to facilitate configuring  
interconnections between said resource images.

21. The system of Claim 17, wherein b) of said method comprises:

b1) computing said valid position for said first module based on an  
20 Extensible Markup Language (XML) description of said first module and an XML  
description of said resources.

22. The system of Claim 17, wherein said method further comprises:

d) causing to be displayed a selectable display of available module parameters in response to a request for said available module parameters for said first module, said selectable display based on characteristics of said first module.

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23. The system of Claim 17, wherein a) of said method comprises displaying a Hypertext Markup Language (HTML) datasheet for said first module.

24. The system of Claim 23, wherein said method further comprises:

10 d) displaying a section of said datasheet in response to a tab being selected, said datasheet having a plurality of tabs identifying sections of said datasheet to be displayed.

25. The system of Claim 17, wherein a) of said method comprises displaying a  
15 circuit schematic for said first module.

26. The system of Claim 17, wherein a) of said method comprises adding an icon for said first module to a group of icons for modules to be configured in said circuit.

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